CLAIMS:

What is claimed is:

1. A method in a data processing system for managing a set of devices in the data processing system, the method comprising:

receiving an alert through an alert mechanism, wherein the alert is at least one of a power alert and a thermal alert;

altering operation of a selected device within the set of devices in response to the alert, wherein at least one of power usage and generation of heat by the selected device is reduced.

2. The method of claim 1, wherein the set of devices is a set of processors.

3. The method of claim 2, wherein the data processing system has a single logical partition.

4. The method of claim 2, wherein the set of devices are a set of physical processors mapped to an equal set of logical processors.

5. The method of claim 4, wherein the selected device is a selected physical processor and wherein the altering step includes:

altering the operation of the selected physical processor by turning off the selected physical processor; and

assigning a corresponding logical processor mapped the selected physical processor to another physical processor in the equal set of logical processors.

6. The method of claim 1, wherein the set of devices is selected from at least one of a set of processors, memory, a set of input/output devices.

7. The method of claim 1, wherein the receiving step and the altering step are performed by a runtime abstraction layer.

8. The method of claim 1, wherein power usage and generation of heat is reduced reducing power used by the selected device.

9. A method for managing a set of physical processors mapped to a set of logical processors, the method comprising:

receiving an alert from an operating system, wherein the alert is at least one of a power alert and a thermal alert; and

altering operation of a selected physical processor within the set of physical processors in response to the alert, wherein at least one of power usage and generation of heat by the selected physical processor is reduced.

10. The method of claim 9 further comprising:

reassigning a logical processor mapped to the selected physical processor if the altering step causes the selected physical processor to be unavailable.

11. The method of claim 10 further comprising:

altering operation of the selected physical processor back to an original state present before the alert if another alert is received canceling the alert; and

reassigning the logical processor corresponding back to the selected physical processor.

12. A data processing system for managing a set of devices in the data processing system, the data processing system comprising:

receiving means for receiving an alert, wherein the alert is at least one of a power alert and a thermal alert; and

altering means for altering operation of a selected device within the set of devices in response to the alert, wherein at least one of power usage and generation of heat by the selected device is reduced.

13. The data processing system of claim 12, wherein the set of devices is a set of processors.

14. The data processing system of claim 13, wherein the data processing system has a single logical partition.

15. The data processing system of claim 13, wherein the set of devices are a set of physical processors mapped to an unequal set of logical processors.

16. The data processing system of claim 15, wherein the selected device is a selected physical processor and wherein the altering means includes:

means for altering the operation of the selected physical processor by turning off the selected physical processor; and

assigning means for assigning a corresponding logical processor mapped the selected physical processor to another physical processor in the equal set of logical processors.

17. A data processing system for managing a set of physical processors mapped to a set of logical processors, the data processing system comprising:

receiving means for receiving an alert from an operating system, wherein the alert is at least one of a power alert and a thermal alert; and

altering means for altering operation of a selected physical processor within the set of physical processors in response to the alert, wherein at least one of power usage and generation of heat by the selected physical processor is reduced.

18. The data processing system of claim 17 further comprising:

reassigning means for reassigning a logical processor mapped to the selected physical processor if the altering means causes the selected physical processor to be unavailable.

19. The data processing system of claim 18 wherein the altering means is a first altering means and wherein the reassigning means is a first reassigning means further comprising:

second altering means for altering operation of the selected physical processor back to an original state present before the alert if another alert is received canceling the alert; and

second reassigning the logical processor corresponding back to the selected physical processor.

20. A computer program product in a computer readable medium for managing a set of devices in a data processing system, the computer program product comprising:

first instructions for receiving an alert, wherein the alert is at least one of a power alert and a thermal alert; and

second instructions for altering operation of a selected device within the set of devices in response to the alert, wherein at least one of power usage and generation of heat by the selected device is reduced.

21. The computer program product of claim 20, wherein the set of devices is a set of processors.

22. The computer program product of claim 21, wherein the data processing system has a single logical partition.

23. The computer program product of claim 21, wherein the set of devices are a set of physical processors mapped to an equal or unequal set of logical processors.

24. The computer program product of claim 23, wherein the selected device is a selected physical processor wherein the second instructions includes:

first sub-instructions for altering the operation of the selected physical processor by turning off the selected physical processor; and

second sub-instructions for assigning a corresponding logical processor mapped the selected physical processor to another physical processor in the equal set of logical processors.

25. A computer program product in a computer readable medium for managing a set of physical processors mapped to a set of logical processors, the computer program product comprising:

first instructions for receiving an alert from an operating system, wherein the alert is at least one of a power alert and a thermal alert; and

second instructions for altering operation of a selected physical processor within the set of physical processors in response to the alert, wherein at least one of power usage and generation of heat by the selected physical processor is reduced.

26. The computer program product of claim 25 further comprising:

third instructions for reassigning a logical processor mapped to the selected physical processor if the altering step causes the selected physical processor to be unavailable.

27. The computer program product of claim 26 further comprising:

fourth instructions for altering operation of the selected physical processor back to an original state present before the alert if another alert is received canceling the alert; and

fifth instructions for reassigning the logical processor corresponding back to the selected physical processor.

28. A data processing system comprising:

a bus system;

a memory connected to the bus system, wherein the memory includes a set of instructions; and

a processing unit connected to the bus system, wherein the processing unit executes a set of instructions to receive an alert through a sub-processor partitioning call, wherein the alert is at least one of a power alert and a thermal alert; and alter operation of a selected device within the set of devices in response to the alert, wherein at least one of power usage and generation of heat by the selected device is reduced.